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2004 / 2005 Conservation Requirements for Groundfish Stocks in the Gulf of St. Lawrence

Report to the Minister of Fisheries and Oceans

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LETTER TO THE MINISTER

April 29 2004

The Honourable Geoff Regan, P.C., M.P.
200 Kent Street
Ottawa, Ontario K1A 0E6

Dear Minister,

Following receipt of your letter dated 2 March, 2004, the FRCC set up consultation meetings to ensure that we received adequate comments and written briefs from the stakeholders on all groundfish species in the Gulf of St. Lawrence, including the two cod stocks. Also, Council members attended the Regional Advisory Process where the Stock Status Reports for Gulf cod were prepared.

I am pleased to report that the seven public consultations were very well attended and meaningful discussions took place. We clearly heard the views of harvesters all of whom had an opportunity to hear presentations from department scientists. At several meetings, harvesters expressed their frustration with fisheries science and management in the Gulf of St. Lawrence.

Attached is the Council's review of the two Gulf cod stocks and advice with respect to potential management approaches for 3Pn4RS and 4TVn cod stocks for 2004. Also included is the Council's analysis of the key issues raised in your letter. The report also contains the conservation recommendations for other groundfish species currently harvested in the Gulf: In the case of the these four stocks, 4T white hake, winter flounder, yellowtail flounder and unit 1 redfish, the Council judged that there was little change from last year's stock information to warrant a change in its advice.

The Council recognizes that the cod resource has not rebuilt to levels capable of supporting a significant commercial harvest. As per last year, the Council is strongly supporting a continued involvement by harvesters in the determination of resource availability. In light of this objective, the FRCC is once more suggesting that the Department reinstate a small participatory cod fishery of 3,500t for the northern Gulf and 3,000t for the southern Gulf.

The issues raised in your letter are fundamental to the present difficulties in the Atlantic fisheries. They can be resolved; however, changes will require the common commitment of all parties to work towards a new fisheries management structure. The Council believes genuine shared stewardship and accountability is the only path forward that will resolve the systemic problems that hinder full cooperation between the stakeholders and the Department of Fisheries and Oceans. Now is the time, after many years of discussion and planning, to move forward with a new approach.

We trust the following advice will be helpful and that the spirit of the recommended approach prevails as new measures are adopted for the long-term rebuilding of these stocks.

Yours truly,

Jean Guy d'Entremont

Jean Guy d'Entremont
Chairman

Response to the Minister's Request

The FRCC's 2004 advice with respect to the northern Gulf cod (4RS3Pn) and southern Gulf cod (4TVN) has been structured in reference to seven key issues raised in the request to the Council by the Minister of Fisheries and Oceans. The Council has consulted widely on these issues and the FRCC's response is as follows:

Whether a material change has occurred in the status of the stocks since your last report based the scientific assessments and the views of stakeholders.

The Council carefully considered all of the information available to it, including the Stock Status Reports (SSRs) for the Gulf of St. Lawrence cod stocks, presentations from harvesters, industry associations, and information provided at public consultations. The FRCC reviewed all the advice provided, sometimes weighing through conflicting information, to determine the status of cod in the Gulf of St. Lawrence. As there is little evidence of significant mixing between the two stocks, the FRCC considered the northern and southern Gulf cod separately.

The available information supports different interpretations of the status of the stocks; there is a clear disconnect between the view of the stocks as presented by DFO science and that of the harvesters. In the southern Gulf there is little additional scientific information while in the northern Gulf there is new, additional scientific data. Harvesters see the stocks as healthy and recovering. Scientists continue to view the stocks as growing very slowly.

The estimate of the spawning stock biomass for the northern Gulf cod provided by science is changed very little (38,000 tonnes), and the change is well within the error of the estimate. On the whole harvesters view the stock as healthy and growing, improving year to year.

In the southern Gulf, the research vessel survey was incomplete and as a result there was no scientific assessment of the southern Gulf cod. Only the sentinel fishery provided new, additional information. The condition of the fish remains healthy and the spawning stock biomass of cod approximates the biological reference limit for this stock. There are few signs of ongoing strong recruitment and the future productivity of the stock remains uncertain. Harvesters see the stock in much better condition, based primarily on their observations of catch rates in the sentinel fishery and by-catches in other fisheries. It is, therefore, unsurprising that there remains substantial disagreement between harvesters and science as to the status of this stock, as is true in the northern Gulf.

The Council considers that there has been no material change from last year for either of the Gulf cod stocks. The FRCC is inclined to the harvesters' view that the size of the northern Gulf cod stock is larger than that estimated by science. Even at the higher estimate of spawning stock biomass the FRCC concludes that the stock is relatively low compared to historical levels. The Council views that the southern Gulf cod biomass is close to that estimated in the 2003 scientific assessment. There are signals from the sentinel fishery that indicate growth, however science shows little sign of growth.

The potential for stock growth and recovery.

How does stock growth or decline occur? Simply stated stock biomass is decreased by losses (primarily mortality from both natural and fishery causes) and increased by the growth in the weight of fish already in the stock and by the addition to the biomass of new young fish (recruitment) entering the stock. Rapid stock growth requires that losses are as low as possible and that growth rates and recruitment are high.

During the late 1980's and early 1990's the factors that influence growth for both cod stocks were poor and the stocks declined markedly, primarily due to high fishing mortality. Subsequently growth rates of fish in the northern Gulf cod stock appear to have improved. There is no clear sign that natural mortality rates have decreased and there is evidence that recruitment has remained relatively low in recent years. The growth rate of fish has also increased somewhat in the southern Gulf cod stock but the natural mortality rate is believed to have remained high and recruitment estimates in recent years have remained low.

Simulations made at the 2004 Regional Advisory Process (RAP) give some indication of how future natural mortality rate and recruitment estimates might influence the potential for growth. These suggest that with recent high natural mortality and with the low recruitment seen since 1990 marginal stock growth, stable or declining abundance could be expected at zero fishing mortality for southern Gulf cod, depending on specific assumptions. Marginal to reasonable growth could be expected for northern Gulf cod, again, depending on the specific assumptions. Limited fishing reduces the stock size marginally compared with a no-fishing assumption. If recruitment increases and natural mortality rate is reduced, then strong stock rebuilding is possible for both stocks. However, based on the simulations, it may take five years or more for im-

proved recruitment to substantially increase the spawning stock biomass. If one or other of these main determinants of stock growth remain at recent levels then rebuilding above the biological reference points for conservation (between 85,000 and 120,000 tonnes for northern Gulf cod; 80,000 tonnes for southern Gulf cod) is possible but biomasses observed in the early 1980s are unlikely.

The Council believes that the potential for stock growth and recovery is largely dependent on recruitment, and natural mortality returning to more favourable conditions on a sustained basis. Limited fishing reduces marginally the potential for growth and recovery but does not increase substantially the risk to the stocks.

The uncertainty respecting the scientific assessments, especially when measured against the longer-term trends in the stocks.

There are many sources of uncertainty in the scientific assessments. Each assessment, such as in the Gulf of St. Lawrence, will have its own strengths and weaknesses. The scientific survey in the Gulf occurs late summer (in August in the northern Gulf and September in the southern Gulf). The present survey has difficulty in sampling the cod over their complete distribution from deep water (where they are sampled reasonably well) to shallow water (where the sampling is either incomplete or very limited). Uncertainty exists about the local spatial distributions of this pattern, e.g. if cod aggregate to feed on schools of capelin, and on the potential for year-to-year variability in the distribution, both factors that can influence estimates from the survey. The absence of hydroacoustics in the survey limits knowledge on the distribution between fixed stations. It appears that these survey problems are more significant in the northern Gulf than in the southern Gulf.

The issue of stock mixing between the northern Gulf stock (3Pn4RS) and the adjacent southern Newfoundland stock (3Ps) remains an area of uncertainty. The Council notes that collaborative research is now pending on this issue. This project will use telemetry technology to track the movements of fish from these two stocks through the use of acoustic tagging. The research should enable estimation of the proportions of the northern Gulf cod stock and the 3PS cod stock that move between the management areas in the winter and the extent of inter-mixing. The acoustic network and tags for the study will be installed in 2004. Results are expected during the winter of 2005-06 and should be used to adjust management measures as appropriate.

The population model used for Gulf cod stocks is very similar to other such models applied around the world and is well accepted in fisheries science. It is now understood, however, that such models provide better guidance about long-term trends than about short-term fluctuations. Unfortunately at this point in time, when natural mortality appears to have been very high, and fishing mortality low, model results have greater uncertainty and may be biased. The model remains useful but its results should be treated somewhat more cautiously given present conditions.

Estimates of stock size for recent years in the assessments could easily be in error by half or double. For example, if natural mortality is half the 35% by number per year, as was the case prior to 1986, then the model simulation would yield a spawning stock biomass for northern Gulf cod in 2003 of slightly below 20,000 tonnes, compared with 38,000 tonnes in the assessment, a somewhat counterintuitive result. On the other hand, if the assessment using only data from the longline sentinel survey is taken as the best representation of stock status, the spawning stock biomass in 2003 would be above 63,000 tonnes. The model is clearly very sensitive to the data and underlying assumptions used.

The Council concludes that the key uncertainty for the northern Gulf cod is in the estimate of the spawning stock biomass. For southern Gulf cod, the key uncertainty appears to be the trend in recruitment.

The potential for bridging the apparent gap between the scientific analysis and the views of the fishing industry.

Scientists and harvesters have different interpretations of the status of the cod stocks in the Gulf of St. Lawrence, particularly in the northern Gulf. Because the scientific interpretation has received more weight in the fishery management decision-making process, harvesters feel disconnected from the process and do not accept the outcome. Furthermore, they have become distrustful of fisheries science. It is the Council's view that the present conflicting interpretations highlight systemic problems in implementing effective fisheries management.

It is not uncommon for harvesters and scientists to have different perceptions of the status of fishery resources. Sometimes, these differences in perception are due to questions of scale (e.g. the stock assessment covers a larger geographical area than that normally covered by any single harvester), timing (e.g. harvesters describes how they presently see the stock, while scientists describes the stock status of a year ago). In

addition, harvesters and scientists come from different backgrounds, are exposed to different risks and choose these risks differently. Harvesters and scientists also have quite different direct experiences with fish in the ocean.

There has been considerable improvement over the past decade in terms of increased cooperation between harvesters and scientists both in the field and in the assessment processes. The Council believes that efforts should continue to improve joint work and collaboration, but the current assessment processes do not and may not be able to incorporate many of the observations that the harvesters do provide. The viewpoint and the interpretation of the harvesters, however, must be respected, and not discounted, in the decision-making process.

Shared stewardship and accountability, consistent with the Policy Framework for the Management of Fisheries on Canada's Atlantic Coast, provides a way forward. It is only when all parties feel both responsibility and accountability that the incentives will encourage and lead to more constructive behaviours. While there has been some shifting in the roles and responsibilities over the past decade, the Council believes that full implementation of the principles and approaches of the Policy Framework would significantly improve the management of the fisheries exploiting Gulf cod stocks. Full cooperation of all parties would be expected at all stages of the assessment and management process. It is necessary that enough consensus develop to allow action but different perspectives can be maintained. In particular, it could be useful to maintain the integrity of the industry views for inclusion in the development of management decisions.

The Council believes that the best way to bridge the gap between the viewpoints of science and industry is through the development of shared stewardship in which the views of stakeholders are more equitably considered.

How shared stewardship and accountability might best be fostered.

During consultations some harvesters proposed that the fisheries management system be changed whereby the Minister would devolve decision-making to a shared stewardship arrangement. Recently the Minister released a policy framework for the management of the Atlantic fisheries. This framework endorsed a shared stewardship approach and stated as follows: "To achieve the vision of biologically sustainable resources supporting self-reliant and viable fisheries, there will be a continued shift away from strictly top-down management to shared stewardship. Participants will be given opportunities to communicate and work together, to contribute specialized knowledge and experience, and to be effectively involved in decision making." The FRCC supports the objectives outlined in the policy framework.

Shared stewardship requires both responsibility and accountability. Responsibility requires that the Minister allow decision-making to be as inclusive as possible and as close to the harvesters as practical. Responsibility also means that the parties establish goals and ensure measurement of progress towards stated goals. Accountability means accepting the outcomes arising from shared decision-making, both positive and negative. It will be challenging for all stakeholders to adapt to such a new approach. The evolution towards this new regime will take many years and require goodwill, commitment and teamwork.

Unfortunately, in the limited time available, the FRCC was unable to review appropriate stewardship models applicable to these fisheries. Nonetheless the Council is convinced that the way forward is through shared stewardship. It is now time for all parties to commit to this process.

A risk managed approach to balance short and long-term trade-offs.

Conceptually, a risk-based approach calls for the recognition and determination of all factors that may be affected by decisions taken. For stakeholders the key risks must be determined and assessed with respect to their likelihood and impact. In general, decision-making should embrace a spectrum of considerations. These may include economic, social, as well as scientific and sustainability considerations. Consideration of the scientific dimension alone is not sufficient. The scientific information, even at its best, is subject to considerable uncertainty and therefore cannot be the sole basis for decision-making.

For management decisions with respect to the Gulf cod stocks particularly important risks to consider are: science views these stocks as being at risk if fishing is allowed; harvesters view these stocks as healthy and argue that their livelihoods and communities will be at risk without a fishery. A viable strategy needs to consider both risks.

The Council concludes that the risk in allowing limited fisheries on the Gulf cod stocks over the next few years is acceptable. However, if the stocks do not show signs of growth and remain near current levels or in fact decline, then even these limited fisheries will need to be reduced or curtailed. The Council carefully consid-

ered the options for fishing in 2004, and concluded that there was no basis to advise total removals different from those advised in the 2003 FRCC report (3,000 tonnes for southern Gulf cod, 3,500 tonnes for northern Gulf cod).

The FRCC believes, however, that these recommended removals and associated management measures should be adjusted in subsequent years based on relative changes in stock size indices. A suitable procedure should be agreed by a joint industry DFO body during 2004 to determine the removals and associated management measures for 2005 and subsequent years. If the stocks grow strongly, while being fished at low rates as the industry believes, then the fishing removals may be increased. If the stocks decrease or remain at much the same size, as science suggests, then the fishing removals should diminish rapidly.

The role of the Minister in this process should be to ensure the health of the cod stocks. The illustrative example below outlines how such a management procedure might be applied. The procedure needs to be transparent, robust to uncertainty, carefully defined and designed to achieve clear conservation and harvesting goals. It is common practice that such management procedures are reviewed periodically and revised in the light of experience and new knowledge. Initially, and at such reviews, they should be designed and tested so that they achieve the stated objectives.

Illustrative example of an interim adaptive management procedure for a fish stock.

This example is designed for application to a particular stock that starts below the biological reference points for conservation but for which a limited fishery is judged to be an acceptable risk.

The removals could be raised or lowered from an initial value in accordance with the performance of a composite biomass index, based upon the equally weighted sums of different available biomass and catch-rate indices. Indices would include surveys by research vessels and industry, catch data from sentinel fisheries and other measurable indices of the fish abundance. The indices should be carefully considered and corrected as appropriate to ensure that the best available data are used. Consideration of status and trends in other quantifiable measures of the stock should also be made. To smooth out annual variations in the index, a running average could be used.

Tentative rules for fixing the removals might be as follows:

- If the composite index increases by more than 5-10%, as an example, compared to the preceding year, then the removals could be raised by half of this percentage increase.
- If the composite index decreases by more than 5-10%, as an example, then the removals would be reduced by something in the range of 10-20%.
- If after a few years the indices remain within 5-10% of their original values, as an example, then the removals should be halved.

The specific data, adjustments and time-scales required would change depending upon the specific characteristics of the fish stock.

Impediments to recovery, including the biological and operational conditions that would be needed for stock recovery.

Productivity in fish is determined by growth of individuals, natural and fishing mortality and recruitment. There are many factors that can limit recovery of a depressed or collapsed stock. We have learned through hard experience that recovery can be much slower than previously thought. There are three key components presently limiting cod recovery in the Gulf: fishing mortality, natural mortality and recruitment. The growth of individual cod in the Gulf, as indicated by weight-at-age, is not, at present, an impediment to cod recovery.

Fishing mortality is one factor that can be directly controlled. In the past harvesting has removed 30% or more of the stocks, by number, per year. This rate of harvesting was too high even during periods when stocks were in much healthier condition. Under present conditions in the Gulf, fishing mortality should be as small as possible to allow recovery but large enough to permit the continuance of a limited fishery.

Natural mortality for cod in the ocean is typically about 20% by numbers per year. In the Gulf, natural mortality for cod in the 1990s was probably closer to 35% by numbers each year. Seals are an important source of this mortality, an observation supported both by fishermen and science. In the early 1990s, condition of the cod influenced mortality, particularly in the northern Gulf. Southern Gulf cod remain in good condition, and northern Gulf cod are now in much better condition. It may be, but is not known, if the stable (south) and improving (north) condition of cod has led to any reduction in the high natural mortality of cod in the Gulf. Generally water temperatures have increased since the late 1980's and early 1990's.

Past scientific review of natural mortality for the Gulf cod stocks concluded that "seal predation was a major factor contributing to this elevated mortality." Seal numbers remain high and diet estimates suggest that a substantial number of small cod are eaten by seals. One might speculate that increasing stocks of capelin and other pelagic fish could provide a substitute for cod in seal diets and thus lead to a lower predation rate on cod. It should be noted, however, that understanding of the food web implications of seal predation in the Gulf is limited. It is clear that seals are having a direct effect on mortality of cod. However, reducing the seal population could result in increased herring and mackerel biomass which could imply increased predation and mortality on cod recruits.

Recruitment may be affected by the marine environment, by predation by other biota, by the size of the spawning biomass of fish, and possibly by human activities such as shipping and oil and gas exploration. The precise environmental determinants of good recruitment in the Gulf are not known. Since temperatures in the Gulf lay at the cold end of the range for cod it is possible that the cold years may adversely affect recruitment. There are also a number of other environmental factors such as the timing and nature of the food for larval cod that might affect recruitment and for which we have limited understanding or information.

While improved conditions for the cod are crucial to their recovery, so too is the cooperation of the harvesters. Perpetuation of the present management approach, in which harvesters feel disenfranchised, could also limit the rate of cod recovery. Implementation of shared stewardship, and the resulting sense of responsibility and accountability this should develop, will help to ensure better adherence to management regulations and hence better conservation.

Finally, and perhaps most importantly, the relation between the numbers of fish and the resulting recruitment is not well understood. It has been shown that larger cod, that has already reproduced, provide more and fitter eggs and egg production may vary with fish condition and that spawning stock biomass alone is not necessarily a precise predictor of egg production. DFO has identified biological reference points for the conservation for northern and southern Gulf cod that may be necessary for the long-term viability of the stock.

STOCK-BY-STOCK RECOMMENDATIONS

Cod - 3Pn4RS

Perspective

The stock is located north of the Laurentian Channel, west of Newfoundland and on the lower north shore of the Gulf of St. Lawrence. The stock overwinters outside the Gulf, southwest of Newfoundland in deep water. In the spring, the fish move toward the Port au Port Peninsula near Bay St. George on the west coast of Newfoundland where spawning begins. During the summer, the cod disperse toward inshore areas along the west coast of Newfoundland and the Middle and Lower North Shore of Quebec. The inshore migration is influenced by water temperature and the presence of capelin, the primary prey of cod. Historically, this cod stock was the more productive of the two Gulf cod stocks, with catches in a mixed fixed gear and mobile gear fishery regularly above 50,000t until the late eighties, and some years above 100,000t.

Prior to 1994, this stock experienced the effects of poor fishing practices (harvesting of undersized fish, dumping, highgrading, misreporting, etc.). Overfishing combined with poor environmental conditions may explain the sharp decline observed in the early nineties, which led to the closure of the fishery in 1994. The fishery reopened in 1997 at low levels prosecuted by fixed gear vessels only.

Analysis

The 2004 scientific assessment indicates that the spawning stock biomass remains relatively unchanged at 38,000 tonnes and the condition and growth of cod has improved and fish are maturing at a later age. Overall the spawning stock biomass is well below the biological reference point for conservation.

The FRCC conducted public consultations in Cow Head, Port-aux-Basques and Blanc Sablon during the first week of April 2004. Due to the moratorium, briefs and presentations did not reflect fishing activity for the previous season. Comments and briefs were very similar to those provided during the 2003 consultations. Participants at this year's consultations emphasized the importance of commercial fisheries participation in determining the status of the stocks and the provision of stewardship to the resource.

Harvesters expressed the view that the catch rates in the sentinel fishery are high and that the by-catch of cod in other fisheries is a persistent problem. They also indicated that the resource is well distributed throughout all areas. Overall they view the stock status as much higher than estimates from the scientific assessment. They question the coverage of the scientific survey which is conducted during the summer when much of the resource has migrated to shallow coastal areas where the survey has little or no coverage. For these reasons, the FRCC's recommendations for 2004/2005 remain relatively unchanged from 2003/2004.

The FRCC recommendations also reflect the analysis provided in the response to issues raised by the Minister in the first part of the Report. The Council feels that stewardship of the resource and a better working relationship between harvesters and science can only take place if active participation is allowed.

The Council therefore recommends the following:

1) **The FRCC recommends that Total Removals, including by-catch provisions from all other fisheries and planned sentinel program and survey removals, of 3Pn4RS cod be set at a level not to exceed 3,500t for 2004/2005. Future fishing mortality should be determined based on procedures developed jointly between harvesters and DFO.**

2) **The FRCC continues to support all collaborative activities, such as the sentinel program and other science collaborative projects that lead directly to information that will assist scientists to enhance the reliability and confidence of stock abundance estimates.**

3) **The FRCC recommends the exploration of opportunities for the control of seal populations.**

4) **The FRCC recommends continuation of the winter fishery closure (November 15 to April 15) on the offshore portions of Burgeo Bank (3Psd) as well as the closure of St. Pierre Bank (3Pse and 3Psg), such closures to remain in place until such time as research may resolve this issue; the FRCC also reiterates its recommendation that for 2004/2005, fishing during the period (November 15 to April 15) on the inshore area of Burgeo Bank (3Psa) be restricted to resident fishermen only.**

5) **The FRCC does not support the operation of a recreational fishery for 3Pn4RS in 2004/2005. The Council's concern is the difficulty of the conservation management of such a fishery.**

6) **In addition to the Gulf-wide closure to directed cod fishing from April 1 to June 23 each year, the FRCC recommends that specifically for 3Pn4RS, no groundfish fishing should take place in the area off Bay St. George-Port au Port (as designed elsewhere) until June 23, 2004.**

7) **The FRCC reiterates its support for industry's recommendation that the directed fixed gear cod fishery in 3Pn4RS be restricted to longline and handline gear only for 2004/2005 and that, in areas where and times when the fixed gear directed cod fishery is open, all fixed gear groundfish activity (lumpfish excepted) in those areas and times where cod are normally found, be restricted to longline and handline gear only.**

Sources

DFO Science

SSR (2004/019) Northern Gulf of St. Lawrence Cod (3Pn, 4Rs) in 2003.

SSR (2003/017) Northern Gulf of St. Lawrence Cod (3Pn, 4Rs) in 2002.

FRCC Consultations

The FRCC held consultations on this stock in 2004 in:

Port Hawkesbury, NS (March 29)
Moncton, NB (March 30)
Gaspé, QC (March 31)
Magdalen Islands, QC (April 1)
Cow Head, NL (April 5)
Port-aux-Basques, NL (April 6)
Blanc Sablon, QC (April 7)

Written Briefs

See Appendix

Cod - 4TVn

Perspective

Cod in the southern Gulf of St. Lawrence have been exploited for over three centuries. After averaging 30,000t early in the last century, landings rose to peak at more than 100,000t in 1958. Landings remained in the 60,000t range after the mid-1960's. TACs were first imposed in 1974 and these became restrictive as the stock declined in the early 1970's. The stock recovered during the 1980s and catches returned to the 60,000t level after which the fishery declined rapidly in the early 1990's. In September 1993, a moratorium to commercial fishing was announced. The fishery was reopened for limited commercial fishing in 1999.

Landings prior to 1950 were primarily hook and line, with mobile gears and gillnets being introduced after a ban on otter trawling was lifted. After 1950, this fishery has supported a substantial harvesting and processing industry in communities in the southern Gulf and the Cabot Strait area where the stock overwinters.

Southern Gulf cod are migratory. The stock overwinters outside the Gulf in 4Vn and northern 4Vs along the edge of the Laurentian Channel. Fish migrate into the shallower waters of the Gulf after the breakup of winter ice. Spawning occurs throughout the Gulf from April through July. During the summer cod are distributed widely. The fall migration begins in October and cod become more concentrated off western Cape Breton in November as they move into 4Vn to overwinter. In some recent years the migration out of the Gulf appears to be taking place earlier than usual with peak fishing off Cape Breton in October.

While this stock has supported a substantial harvesting and processing industry in the past, it is considered to be a stock with low productivity compared to cod stocks outside of the Gulf of St. Lawrence. Accordingly, it should be managed cautiously as high growth rates cannot be expected.

Analysis

The most recent full assessment of the status of this stock was conducted in February 2003. The index of stock status from the research vessel survey could not be updated in 2003 as a result of the *CCGS Alfred Needler* being disabled shortly before the September survey.

During the year, changes were made to the mobile sentinel surveys and catch rates in the survey could not be compared to those of the program in previous years. During the 2003 survey, cod were found in most areas except for the central area of the southern Gulf. Overall the stock status has remained relatively unchanged. The condition of the fish remains healthy and the spawning stock biomass of cod, as estimated from the 2002 survey, approximates the biological reference limit for this stock. There are few signs of ongoing strong recruitment and the future productivity of the stock remains uncertain.

The FRCC conducted public consultations in Port Hawkesbury, Moncton, Gaspé and the Magdalen Islands during the last week of March 2004. Due to the cod moratorium, briefs and presentations did not reflect fishing activity for the previous season. Comments and briefs were very similar to those provided during the 2003 consultations.

Participants at this year's consultations emphasized the importance of commercial fisheries participation in determining the status of the stocks and the provision of stewardship to the resource. There were continued concerns expressed about the increasing number of seals (mainly grey seals) in the Gulf of St. Lawrence. For these reasons the FRCC's recommendations for 2004/2005 remain relatively unchanged from 2003/2004.

The FRCC recommendations also reflect the analysis provided in the response to issues raised by the Minister in the first part of the Report. The Council feels that stewardship of the resource and a better working relationship between harvesters and science can only

take place if active participation even on limited basis is allowed.

The Council therefore recommends the following:

1) **The FRCC recommends that total removals, including by-catch provisions from all other fisheries and planned sentinel program and survey removals, of 4TVn cod be set at a level not to exceed 3,000t for 2004/2005. Future fishing mortality should be determined based on procedures agreed to by industry and DFO.**

2) **The FRCC continues to support all collaborative activities, such as the sentinel program and other science collaborative projects that lead directly to information that will assist scientists to enhance the reliability and confidence of stock abundance estimates.**

3) **The FRCC recommends the exploration of opportunities for the control of seal populations.**

4) **In addition to the Gulf-wide closure to directed cod fishing from April 1 to June 23 each year, the FRCC continues to recommend that specifically for 4TVn, no groundfish fishing should take place in the designated area around Miscou Bank until June 23, 2004, and that the designated area around Shediac Valley remains closed year round.**

5) **The FRCC does not support the operation of a recreational fishery on 4TVn cod in 2004/2005. The Council's concern is the difficulty of the conservation management of such a fishery.**

Sources

DFO Science

SSR (2004/003) Cod in the Southern Gulf of St. Lawrence
SSR (2003/016) Cod in the Southern Gulf of St. Lawrence.

FRCC Consultations

The FRCC held consultations on this stock in 2004 in:

Port Hawkesbury, NS (March 29)
Moncton, NB (March 30)
Gaspé, QC (March 31)
Magdalen Islands, QC (April 1)
Cow Head, NL (April 5)
Port-aux-Basques, NL (April 6)
Blanc Sablon, QC (April 7)

Written Briefs

See Appendix

AMERICAN PLAICE - 4T

PERSPECTIVE

American plaice was once the most abundant groundfish after cod in the southern Gulf of St. Lawrence (NAFO subdivision 4T). Females of the species are distinguished by a faster growth and reach larger sizes than males. Female American plaice reach sexual maturity between 7 and 15 years of age while males reach maturity between 5 and 7 years of age. Spawning occurs in late Spring and early Summer. American plaice consume a wide range of prey species in their life cycle.

Results based on research surveys indicate that the stock is at its lowest historical level. The survey trawlable biomass, which was estimated at 300,000t in the late 1970's, decreased to approximately 30,000t in 1999. Recent Research Vessel (RV) and sentinel survey catches are higher and stable in the eastern part of 4T. There was also a slight increase of smaller plaice (< 25cms)in the survey abundance index conducted by the *Wilfred* Templeman. Recent commercial catches show a pattern of a shift in distribution of the stock in recent years consistent with the surveys.

The 4T American plaice fishery has been managed by quota since 1977, with landings ranging between 5,000t and 10,000t until 1992. From 1993 to 1999, lower catches in the range of 1,300t to 2,400t did not allow for a recovery of the stock. Catches since 1999 have been in the range of 1000t. American plaice stocks have also shown declines in adjacent management areas.

ANALYSIS

The 2004 DFO Stock Status Report indicates that:

- In 2003, landings of American plaice declined to 389t, the lowest level since 1965. This is due in part to a reduction in the quota, from 1,000 to 750t and to reductions in fishing effort and poor market demand since 2000.
- The index of abundance could not be updated due to unexpected replacement of the *Alfred Needler* by the *Wilfred* Templeman and a resultant incomplete survey of all stations.
- The RV survey abundance index indicates that the stock in 4T has been at a very low level for the past four years. The declining trend in the index since 1975 is primarily caused by a large decline in western 4T.
- Recruitment has been below the long term average for several years.
- Without improved recruitment and at recent catch levels, no significant improvement can be anticipated in the short to medium term.

In 2003, the < 45' mobile gear competitive fleet sector could not catch their quotas due to restrictions on cod by-catch as a result of the cod closure in 2003. Industry stakeholders also advised that poor market conditions have not permitted them to catch the total TAC, therefore, due to overall lack of effort, landings declined to 389t in 2003.

Harvesters generally agreed with the Stock Status Report that this stock is at low levels. However, high catch rates and abundance in Eastern 4T in both the surveys and the commercial catch supported industry views from that area that a higher TAC is possible. During consultations, industry requested both the status quo of 750t and increased quota levels up to 1,000t. There were also reports of mesh-size increases in other fisheries causing increased by-catches of American plaice necessitating a higher quota.

As stated in the SSR, some harvesters also believed that seal predation on plaice may be substantial.

The FRCC agrees that this stock is currently at a relatively low level, mainly due to a decline that occurred in 4T west.

In 2003, the FRCC recommended to maintain a TAC of 1,000t. DFO subsequently reduced the quota to 750t for 2003. Although indicators remain poor, fishing effort remains low and there are catch restrictions in the management area, therefore, the FRCC believes the status quo is acceptable under the current conditions.

The FRCC recommends that the TAC for 4T American plaice be maintained at 750t for 2004/2005.

Sources

DFO Science

SSR 2004/004 American Plaice in the Southern Gulf of St. Lawrence (Div. 4T).

SSR 2003/004 American Plaice in the Southern Gulf of St. Lawrence (Div. 4T).

FRCC Consultations

The FRCC held consultations on this stock in 2004 in:

Port Hawkesbury, NS (March 29)
Moncton, NB (March 30)
Gaspé, QC (March 31)
Magdalen Islands, QC (April 1)
Cow Head, NL (April 5)
Port-aux-Basques, NL (April 6)
Blanc Sablon, QC (April 7)

Written Briefs

See Appendix

WITCH FLOUNDER - 4RST

PERSPECTIVE

Witch flounder are found in the deeper waters of the North Atlantic. In the Northwest Atlantic, witch range from the lower Labrador coast to Cape Hatteras, North Carolina. They are slow growing and long-lived. Spawning for this species occurs from spring to late summer, depending on the region. Spawners aggregate in channels in January and February, in the Gulf of St. Lawrence.

Witch flounder are known to move into deep water during winter months and they cease feeding during that period. Witch grow faster in the Gulf of Maine and Georges Bank, where feeding occurs year-around and water temperature is higher, in comparison with northern areas of their range.

With the introduction of the otter trawler, the commercial fishery for witch flounder was developed significantly in Newfoundland in the 1940's. The fishery in the Gulf of St. Lawrence began when the stocks in Fortune Bay declined and the vessels moved into Bay St. George (Newfoundland) in the 1950's.

Winter catches of witch gained in importance in the offshore, as by-catch in the cod and redfish directed fisheries. The fishery further expanded in the Gulf during the 1970's to the Esquiman Channel and the northern shore of Cape Breton Island.

Witch flounder in the northern Gulf of St. Lawrence (4RS) came under quota management in 1977, with a precautionary quota of 3,500t. The first detailed assessment of 4RS was conducted in 1978 and continued until 1981. During the 1980's, landings in 4T increasingly dominated Gulf witch landings, however the management unit remained as 4RS. The TAC was increased to 5,000t in 1979 in 4RS, to remove an old and slow growing component of the stock. This measure reduced the age composition of the stock and landings declined, and by 1982 the TAC was reduced to 3,500t. Stock assessments resumed in 1991, and following the recommendations of the Fisheries Resource Conservation Council in 1994, the management unit was extended to 4RST in 1995.

ANALYSIS

The 2004 DFO Stock Status Report indicates that:

- In 2003, the TAC remained at 1,000t. Total landings were 660t. Seine fleets directing for witch flounder caught most of their quota in 4T but not in 4R.
- The research vessel survey biomass index for commercial sizes (30+cm) decreased to low values in the mid 1990s. The index increased to an intermediate level in the 1999-2002 period.
- The biomass index for the southern Gulf portion of the stock area cannot be updated for 2003. The regular survey vessel, the *CCGS Alfred Needler*, was disabled shortly before the September survey and was replaced by the *CCGS Wilfred Templeman*. The relative fishing efficiency of the two vessels is unknown. Furthermore, portions of the survey area were either unsampled or undersampled in 2003.
- In contrast to the RV surveys, sentinel surveys of the northern Gulf (primarily 4R and 4S) provide no indication of an increase in biomass since the 1990s.
- Two strong year-classes have been observed in the research vessel survey of the northern Gulf since 1997. If this persists, the resource should improve.
- Stock structure is a major source of uncertainty for this resource.

Industry recommended an increase in the TAC based on increases in catch rates in recent years and DFO Science's outlook that this stock should continue to improve due to the strong year-classes which have been observed in the RV surveys.

The FRCC notes that the higher proportion of the overall biomass is found in the Cape Breton Trough

area of eastern 4T. The Council recognizes that the strong 1995 year-class should soon contribute to the fishery along with a second strong year-class, first evident in 2001. However, at this time, it would be premature to increase the TAC based only on these particular year-classes that are still mostly pre-recruits. Also, much of the biomass is currently immature at below 30 cm.

The FRCC recommends that the TAC for 4RST witch flounder be maintained at 1,000t for 2004/2005.

Considering the high level of uncertainty on the structure of this stock, the Council believes that it is important to continue the research on this particular issue. A number of exceptionally strong year-classes have been produced on the Scotian Shelf in the 1990's, perhaps contributing to the increase in abundance of larger witch flounder in the Cape Breton Trough.

The FRCC recommends that DFO Science continue the investigation on the witch flounder stock structure and report at the next Regional Advisory Process (RAP).

Sources

DFO Science

SSR 2004/008 Witch flounder (Divs. 4RST).

SSR 2003/005 Witch flounder (Divs. 4RST).

FRCC Consultations

The FRCC held consultations on this stock in 2004 in:

Port Hawkesbury, NS (March 29)
Moncton, NB (March 30)
Gaspé, QC (March 31)
Magdalen Islands, QC (April 1)
Cow Head, NL (April 5)
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Blanc Sablon, QC (April 7)

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GREENLAND HALIBUT - 4RST

PERSPECTIVE

Greenland halibut are generally found at depths of 70 to 280 fathoms. Spawning takes place primarily in Winter, from January to March. Male and female halibut have different growth rates, with females reaching maturity at a larger size. There are two main fishing areas for this stock in the Gulf of St. Lawrence: a western area, in the St. Lawrence estuary and the Anticosti Island area, which represents generally more than 80% of the catches, and an eastern area, in the Esquiman Channel.

ANALYSIS

The development of the fishery is recent. Until the mid-1970s, Greenland halibut landings in 4RST were primarily of by-catches from other groundfish fisheries. Later, a directed fishery using gillnets and bottom trawls was developed and led to record landings, very high catches, above 8000t, were experienced and were followed by a sharp decline. In 2002-2003, the fishery was mainly prosecuted with gillnets with a 3,500t TAC, from which, only 1,600t were caught. In 2003/2004, a combination of a closed cod fishery, better catch rates and better prices resulted in a significant increase in effort from harvesters in the southern portion of 4Ra and 4Rb. Landings reached the TAC of 3,500t for the first time in several years.

The 2004 stock status report indicates that the biomass indices obtained from trawl surveys (DFO and sentinel fishery surveys) decreased in 2001 and 2002 but increased in 2003. The higher biomass is generally attributed to the recruitment of several large year-classes, including the 1997 year-class. The report also noted that the 1999 year-class seems to be fairly large and growth rates appear to be better than in the previous year-class. Abundance indices for juveniles of the 2001 and 2002 year-classes were also high.

The report indicates a positive forecast for 2004 due to the strong year-classes and high numbers of pre-recruits. Stock size indicators show an increase in the size of the population in recent years and significant increases in the fishable biomass. However, the SSR cautions that the increase in fishable biomass from the 2003 survey may be overestimated due to changes in catchability between 2002 and 2003.

Some stakeholders recommended increases in the TAC up to 5,500t for this stock based on the current trend in abundance and catch rates. The Council notes the positive outlook for the stock but feels that some caution should be exercised with respect to an increase in the TAC at this time. While stock abundance appears to have increased, the fishery is based on recruitment and the Council would like to ensure that the current trend is sustainable over a longer term. Removals at the current harvest level are therefore preferred.

The FRCC recommends that the TAC for 4RST Greenland halibut be maintained at 3,500t for 2004/2005.

Sources

DFO Science

SSR 2004/014 Gulf of St. Lawrence (4RST) Greenland Halibut in 2003.

SSR 2003/007 Gulf of St. Lawrence (4RST) Greenland Halibut in 2002.

FRCC Consultations

The FRCC held consultations on this stock in 2004 in:

Port Hawkesbury, NS (March 29)
Moncton, NB (March 30)
Gaspé, QC (March 31)
Magdalen Islands, QC (April 1)
Cow Head, NL (April 5)
Port-aux-Basques, NL (April 6)
Blanc Sablon, QC (April 7)

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ATLANTIC HALIBUT - 4RST

PERSPECTIVE

Atlantic halibut is widely distributed in the deep channels of the Gulf of St. Lawrence. It is thought that it over winters outside the Gulf, possibly in the 3Pn area. Information related to the life cycle, biology and reproduction of halibut is limited. The species grows rapidly and continuously at about 8 centimeters per year in the Gulf. Females reach a larger size than males. Spawning is thought to occur from January to May.

The halibut fishery is generally prosecuted with longlines. Over the past 20 years, the average landings are in the range of 300-400t with peaks as high as 800t in the 1960's. Historical data from prior to 1950 indicate that catches may have been above 1,000t.

ANALYSIS

The most recent Atlantic halibut stock assessment was conducted in 2000. The stock status report has been updated from fishery landings data, the scientific groundfish surveys and the tagging program which is in its sixth year. The Stock Status Report update indicated:

- The stock remains at a very low level and preliminary landings are below the TAC even though they have increased to the second highest figure recorded over the past five years.
- The majority of halibut harvested by the commercial fishery has ranged from 81 to 110 centimeters. The results of at-sea sampling indicate that pre-recruits were still well represented in catches in 2003.
- Observed abundance of small Atlantic halibut in the catch could indicate that recruitment increased during the 1990s due to better survival following the introduction of the Nordmore grid and the reduction in trawling activities since the moratoria.
- An increase in the abundance of small halibut has been noted in the scientific surveys coinciding with industry observations.
- According to the Atlantic halibut tagging program in the Gulf, tagged individuals are typically recaptured in the fishing division where the tagging was carried out. However, the absence of restrictions for the Atlantic halibut in subdivision 3Pn could affect the conservation of the Gulf stock.
- Lack of recent data on sexual maturity for the Gulf halibut stock does not allow biologists to confirm whether the minimum legal size of 81 cm is adequate to protect the spawning stock.

A tagging program on small under 81 cm halibut that must be released was initiated 6 years ago. The analysis of these data does not reveal any significant statistical relationship between the length of time between tagging and recapture and the distance between tagging and recapture sites, nor between the size of fish at tagging and the distance between tagging and recapture sites.

As in previous years, most of the 2003 catch was taken with fixed gear, primarily longlines. Preliminary reported landings were 334t against a TAC of 350t due to certain fleets not fishing their allocations.

The implementation of a minimum legal size and the mandatory release of undersized halibut have translated into a significant decrease in the reported landings of small fish. However, questions remain about the actual size at maturity for females, which might be higher than the present minimum legal size of 81 cm. This raises the issue of stock reproductive capacity under the current management regime. However, the

wide size range of fish caught in the fishery is a positive sign of stock health.

The FRCC recommends that efforts be devoted to complete the halibut gonad sampling surveys initiated last year, in order to evaluate if the present minimum legal size (81 cm) is effective in protecting spawning females.

Some stakeholders have suggested that releasing large female halibut could benefit the Stock Spawning Biomass and increase stock potential. The FRCC encourages DFO science and industry to evaluate benefits of implementing such a measure for long term rebuilding of the stock.

The FRCC recommends that the release of fish smaller than 81 cm continue to be enforced in all regions and all mortality associated with discarding be included in total mortality estimates.

The FRCC remains concerned by the catches occurring in Winter in the Cabot Strait (3Pn area) which are not attributed to an adjacent stock area. Declared landings made in this area in the last five years averaged 33,8 t. However, landings have increased by approximately 44 % over last year. Tagging recaptures should resolve this issue over time.

The FRCC recommends that 3Pn catches continue to be limited to 40t until the stock structure is defined from tagging data.

Limited industry input reported that there has been a good indication of halibut abundance. One industry brief recommends a 100t increase for this stock. However, the uncertainties related to stock structure, age at maturity information, and numbers of juvenile halibut in the catch warrant a cautious approach.

The FRCC recommends that the TAC for 4RST Atlantic halibut be maintained at 350t for 2004/ 2005.

Due to the difficulty in measuring this stock accurately using traditional scientific surveys and lack of information on this stock, it appears future assessments would greatly benefit from a dedicated longline survey to measure halibut abundance and stock characteristics.

The FRCC recommends that the establishment of a longline survey be explored and considered for the Gulf region by DFO with the participation of industry, possibly modeled after the ongoing Halibut Longline Survey being conducted in the Scotia Fundy region for the past six years.

FRCC believes that cooperation between regions, including DFO and industry, is essential to generate results to better understand stock definition (sharing information collected by tagging program and longline survey).

Sources

DFO Science

SSR 2004/013 Atlantic Halibut of the Gulf of St. Lawrence (4RST) Update (2003)

SSR 2003/006 Atlantic Halibut of the Gulf of St. Lawrence (4RST) Update (2002)

FRCC Consultations

The FRCC held consultations on this stock in 2004 in:

Port Hawkesbury, NS (March 29)
Moncton, NB (March 30)
Gaspé, QC (March 31)
Magdalen Islands, QC (April 1)
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Blanc Sablon, QC (April 7)

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APPENDICES

FRCC Terms of Reference

1. Introduction

The Government of Canada is committed to a more comprehensive approach to the conservation and management of our fisheries resource. This approach demands a better understanding of complex fisheries ecosystems - the interaction of fish with other species, predator-prey relationships, and also changes in the marine environment like ocean currents, water temperatures and salinity.

The Government of Canada is also committed to a more effective role in decision-making for those with practical experience and knowledge in the fishery.

The Minister of Fisheries and Oceans has established the Fisheries Resource Conservation Council (FRCC) as a partnership between government, the scientific community and the direct stakeholders in the fishery. Its mission is to contribute to the management of the Atlantic fisheries on a 'sustainable' basis by ensuring that stock assessments are conducted in a multi-disciplined and integrated fashion and that appropriate methodologies and approaches are employed; by reviewing these assessments together with other relevant information and recommending to the Minister total allowable catches (TACs) and other conservation measures, including some idea of the level of risk and uncertainty associated with these recommendations; and by advising on the appropriate priorities for science.

2. Definition of Conservation

Fisheries conservation is that aspect of the management of the fisheries resource which ensures that its use is sustainable and which safeguards its ecological processes and genetic diversity for the maintenance of the resource. Fisheries conservation ensures that the fullest sustainable advantage is derived from the resource and that the resource base is maintained.

3. Council Objectives

3.1 To help the government achieve its conservation, economic and social objectives for the fishery. The conservation objectives include, but are not restricted to:

3.1.1 rebuilding stocks to their 'optimum' levels and thereafter maintaining them at or near these levels, subject to natural fluctuations, and with 'sufficient' spawning biomass to allow a continuing strong production of young fish; and,

3.1.2 managing the pattern of fishing over the sizes and ages present in fish stocks and catching fish of optimal size.

3.2 To develop a more profound understanding of fish-producing ecosystems including the inter-relationships between species and the effects of changes in the marine environment on stocks.

3.3 To review scientific research, resource assessments and conservation proposals, including, where appropriate, through a process of public hearings.

3.4 To ensure that the operational and economic realities of the fishery, in addition to scientific stock assessments, are taken into account in recommending measures to achieve the conservation objectives.

3.5 To better integrate scientific expertise with the knowledge and experience of all sectors of the industry and thus develop a strong working partnership.

3.6 To provide a mechanism for public and industry advice and review of stock assessment information

3.7 To make public recommendations to the Minister.

4. Mandate and Scope

4.1 The Fisheries Resource Conservation Council will address these objectives by bringing together industry, DFO science and fisheries management, and external scientific and economic expertise in one body.

4.2 The Council will:

4.2.1 advise the Minister on research and assessment priorities;

4.2.2 review DFO data and advise on methodologies;

4.2.3 consider conservation measures that may be required to protect fish stocks;

4.2.4 review stock assessment information and conservation proposals, including through public hearings, where appropriate; and,

4.2.5 make written public recommendations to the Minister on TACs and other conservation measures.

4.3 The Council may recommend any measures considered necessary and appropriate for conservation purposes such as TACs, closure of areas to fishing during specific periods, approaches to avoid catching sub-optimal sized fish or unwanted species, and restrictions on the characteristics or use of fishing gears.

4.4 The Council's scope includes Canadian fish stocks of the Atlantic and Eastern Arctic Oceans. In the first instance, the Council will address groundfish, and then subsequently take on responsibility for pelagic and shellfish species.

4.5 The Council may also advise the Minister on the position to be taken by Canada with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO).

5. Size, Structure and Make-Up

5.1 The Council will consist of not more than 14 members with an appropriate balance between 'science' and 'industry'.

5.2 Members are chosen on merit and standing in the community, and not as representatives of organizations, areas or interests.

5.3 'Science' members, are drawn from government departments, universities or international posts, and are of an appropriate mix of disciplines, including fisheries management and economics.

5.4 'Industry' members are knowledgeable of fishing and the fishing industry and understand the operational and economic impacts of conservation decisions.

5.5 All members of the Council are appointed by the Minister.

5.6 All members, including the Chairperson, are appointed for a three year term; terms can be renewed.

5.7 Members appointed from DFO serve 'ex officio'.

5.8 Members have to disclose any interest in the Atlantic or Eastern Arctic fishery and take appropriate measures so as to avoid potential or real conflict of interest situations during the term of appointment.

5.9 The four Atlantic Provinces, Quebec and Nunavut may each nominate one delegate to the Council. These delegates have access to the Council's information, and may participate fully in meetings, but will not be asked to officially endorse the formal recommendations to the Minister.

5.10 The Council is supported by a small Secretariat, to be located in Ottawa. The Secretariat will:

5.10.1 provide administrative support for the functioning of the Council;

5.10.2 provide a technical science and fisheries management support;

5.10.3 organize Council meetings;

5.10.4 record decisions of the Council;

5.10.5 undertake a professional communications function for the Council, providing a central point for communications to and from the Council; and

5.10.6 undertake such other matters as from time to time might be appropriate.

5.11 The Chairman may appoint an Executive Committee, consisting of the Chairman, Vice-Chairman, and three other Members.

5.12 In addition, the Chairman may, from time to time, strike an 'ad hoc' committee to deal with a specific issue.

6. Activities:

6.1 Reviews appropriate DFO science research programs and recommends priorities, objectives and resource requirements.

6.2 Considers scientific information - including biology, and physical and chemical oceanography, taking into account fisheries management, fishing practices, economics and enforcement information.

6.3 Conducts public hearings wherein scientific information is presented and/or proposed conservation measures/options are reviewed and discussed.

6.4 Recommends TACs and other conservation measures.

6.5 Prepares a comprehensive, long-term plan and a work plan for the Council which are reviewed annually at a workshop with international scientists and appropriate industry representatives.

6.6 Ensures an open and effective exchange of information with the fishing industry and contributes to a better public understanding of the conservation and management of Canada's fisheries resource.

FRCC Membership

Members:

Jean Guy d'Entremont, Chairman
Gabe Gregory, Vice-Chair
John Angel
Guy Cormier
Donald Delaney
Dr. Brad de Young
Ken Fowler
Douglas Johnston
Dr. Louis Lapierre
Jean-Jacques Maguire
John Pope

Provincial Delegates

Carey Bonnell, Nunavut
Mario Gaudet, New Brunswick
David MacEwen, Prince Edward Island
Pierre Bédard, Québec
Tom Dooley, Newfoundland and Labrador
Clary Reardon, Nova Scotia

Ex Officio

Gilles Belzile
Barry Rashotte
David Gillis

Secretariat

Arthur Willett, Executive Director
Tracey Sheehan
Helena Da Costa
Debra Côté

Acronyms

CNOPB	The Canada-Newfoundland Offshore Petroleum Board
CNSOPB	The Canada-Nova Scotia Offshore Petroleum Board
CPUE:	Catch per unit of effort
DFO:	Department of Fisheries and Oceans
FRCC:	Fisheries Resource Conservation Council
GEAC:	Groundfish Enterprise Allocation Council
IFMP:	Integrated Fisheries Management Plan
ITQ:	Individual Transferable Quotas
IVQ:	Individual Vessel Quotas
MPA:	Marine Protected Area
NAFO:	Northwest Atlantic Fisheries Organization
PA:	Precautionary Approach
RAP:	Regional Advisory Process
RV:	Research Vessel
SSB:	Spawning Stock Biomass
SSR:	Stock Status Report
TAC:	Total Allowable Catch
TAGS:	The Atlantic Groundfish Strategy
VPA:	Virtual Population Analysis
ZAP:	Zonal Assessment Process

Briefs Received

Groupe de travail sur la morue – Aldo Mercier (2004-010-00043)

Northern Cape Breton Fishing Vessels Association – Clifford Aucoin (2004-010-00039)

North of Smokey Fishermen's Association – Clarrie MacKinnon (2004-010-00040)

Victorin Mallet (2004-010-00041)

Lawrence Felt (2004-010-00053)

Pierrot Haché (2004-010-00048)

David Boyd (2004-010-00035)

Regroupement des Associations de pêcheurs de la basse cote nord - Paul Nadeau (2004-010-00049)

Labrador Straits Development Corporation – Kelvin Letto (2004-010-00055)

Patricia Cabot (2004-010-00056)

Frank Hennessey (2004-010-00052)

PEIFA - Jeff White (2004-010-00050)

Le Comite de gestion régional du turbot – Gilles Champoux (2004-010-00042)

Oswan Tucker & Rendell Genge (2004-010-00047)

Réginald Cotton (2004-010-00044)

Group of Seven Turbot Fishermen -Oswan Tucker (2004-010-00037)

200 Mile Fishing Zone and NAFO Fishing Boundaries